

# Elements of Respiratory Protection

## Lesson Guide #4



OBJECTIVES: *Upon  
completion of this  
topic, you will be able to*

- Identify the elements of the Navy's respiratory protection program.
- Describe the various types and uses of respirators.
- Describe the limitations, selection, and care of respirators, and fit testing requirements.

# INTRODUCTION

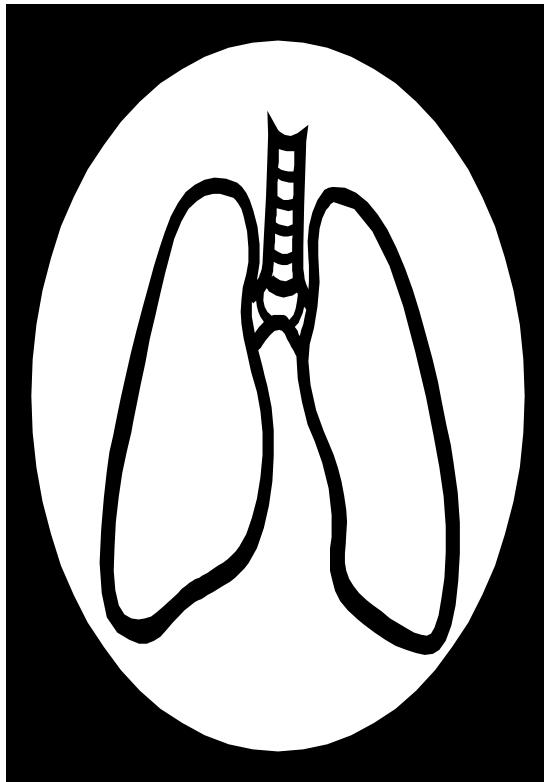
- In an industrial environment, or when using certain cleaning agents, your breathing air may become contaminated. Inhaling the air contaminants can be hazardous to your health.

# INTRODUCTION

## Con't

- Engineering controls, such as ventilation, are used to reduce contaminates in the air in the workplace. Where controls are not available / installed, personal protective equipment may be required.

# Health Hazards of Air Contaminants



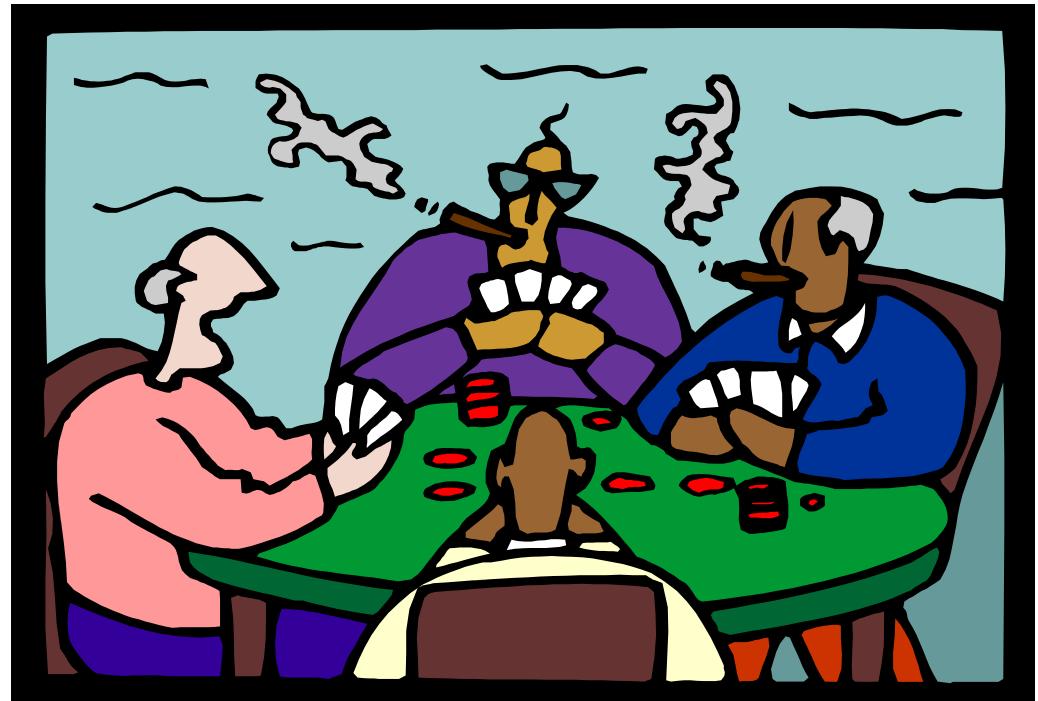
- Air contaminants enter the body through the lungs.
- Mucus and small, hair like structures help cleanse the upper lungs, nose and throat of air contaminants, but very small particles and gasses may pass deep into the lungs. Air contaminants may cause illness by:

# Health Hazards of Air Contaminants (*continued*)

1. Direct damage to the lungs.
2. Damage to other body organs as a result of blood distributing the contaminant to other parts of the body

# Classification of Air Contaminants

- Dusts
- Mists
- Fumes
- Gases
- Vapors



*You can't afford to  
gamble*

# Physical Characteristics of Air Contaminants

- Air contaminants:
  - may be heavier than air,
  - may be lighter than air,
  - may displace oxygen
  - may be toxic.

# Engineering Controls

- **Substitution**
- Exhaust ventilation / vents
- Dilution ventilation
- Enclosure
- Isolation

# The Navy Respiratory Protection Program

- Contains the following elements:
  - Written standard operating procedures
  - Selection of the proper respirator for the job
  - Training for RPP managers, users, supervisors, and respirator issuers.
  - Fit-testing
  - Inspection and maintenance

# The Navy Respiratory Protection Program

- Elements: ( *continued* )
  - Cleaning and disinfection of respirators.
  - Proper storage of respirators.
  - Use of only approved respirators.
  - Medical screening of respirator users.
  - Periodic program evaluation

# The Navy RPP (*continued*)

- Industrial Hygiene surveys
- Ensure grade "D" breathing air for supplied air respirators is available.
- Employee record keeping.

# Types of Respirators

- Air purifying respirators
- Dust filters
- Combination protection
- Air supplying
- SCBA



# Medical Qualification

- Before you can wear a respirator you must be “medically qualified.”
- Some people may have medical problems that prevent them from using a respirator.
- Medical exams must be conducted to determine eligibility or limitations.
- Once cleared by medical, you may then be fit tested and issued a respirator.

# Respirator Selection

- Evaluation of the hazard
- Match the respirator to the hazard
- Respirators are issued only by trained personnel who are aware of the correct selection.

# Respirator Fit Testing

- There are a variety of respirator models and styles, made to fit a variety of face shapes and sizes.
- Fit testing - This is required for all personnel who are assigned to use a respirator.

# Care of Your Respirator

- Reusable respirators with detachable cartridges must be cleaned and sanitized after each use.
- Always keep your respirator in a clean plastic bag, away from heat or strong chemicals.

# Respirator Care (continued)

- Disposable respirators are discarded after the end of the recommended period of use, after excessive breathing resistance/ clogged filter, or when odor breakthrough occurs.
- Maintenance free respirators can either be discarded after breakthrough or filter clogging, or be cleaned and used again with a new filter/cartridge.

# Review and Summary

- When good ventilation cannot protect you from air contaminants, respiratory protection may be necessary. Respirators are designed to protect against specific air contaminants and must be selected to match the hazard. Your command provides you with the respiratory protection needed in your work, and all hands must cooperate and correctly use required respiratory protection.